1800   P-826-1

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/886,226	07/01/97	COLLINS R	06677/027001

LM32/0302

DAVID L FEIGENBAUM
FISH AND RICHARDSON
225 FRANKLIN STREET
SUITE 3100
BOSTON MA 02110-2804

EXAMINER
JOHNSON, T

ART UNIT	PAPER NUMBER
2723	19

DATE MAILED: 03/02/98

RECEIVED

MAR 0 5 1998

FISH & RICHARDSON P.C.
BOSTON, MA

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

1/16/98

☒ Responsive to communication(s) filed on ___1/16/98___

☒ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire ___3___ month(s), ~~or thirty days, whichever is longer,~~ from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) ___1-34___ is/are pending in the application.

    Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) ___1-34___ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

    ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

    ☐ received.

    ☐ received in Application No. (Series Code/Serial Number) _____

    ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    *Certified copies not received: _____

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Docketed By Practice Systems
Action Code: 3M final action
Base Date: 3/2/98
Due Date: 6/2/98
Deadline: 9/2/98
Initials: MW
Record: 195094

Docketed By Billing Secretary
Due Date: _____
Deadline: _____
Initials: _____

Attachment(s)

☐ Notice of Reference Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

Part III Detailed Action

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

2.   Claims 1, 2, 5-13, 15, 19-21, and 34 are rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865, in view of Robinson, 4,855,934.

For claim 1, a method of compressing a digital image with at least three textures to reduce the amount of storage required for holding it prior to display is provided by Gentile in at least the abstract and Fig. 2. Generating a bitmap representing boundaries separating regions comprising pixels is provided by Gentile in at least Fig. 2 and the abstract, where rasterization provides a bitmap practically by definition, so that rasterization obviously provides for a bitmap. Generating a pointer for each region, where the pointers associate regions with textures is provided by Gentile in at least Fig. 2, and in at least c. 2, lines 50-66 and in the in the first full paragraph in c. 7. Storing the bitmap and the pointers for later display is provided in at least c. 1, lines 10-15, c. 2, lines 10-20, c. 3, lines 35-55, and c. 4, lines 44-49. Generating a bitmap representing only boundaries is not explicitly provided by Gentile, but is conventional and well known as evidenced by Robinson in at least the last full paragraph in c. 4. A bitmap of boundaries can be used for the boundaries of Gentile as shown in Fig. 2. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the bitmap of boundaries of Robinson, since his bitmap is a high resolution bitmap, thus providing for an accurate boundary representation, and also because he provides for accurately portraying edge boundaries in contour texture maps over a wide dynamic range of image sizes - second full paragraph in c. 2.

For claim 2, boundaries and regions of different pixel values is provided in at least Fig. 2, where boundaries are explicitly illustrated, and boundaries are also explicitly provided in at least the paragraph bridging cols. 2-3, and pixels are provided in at least c. 1, lines 33-50, c. 4, lines 50-54, and the paragraph bridging cols. 10-11.

For claims 5 and 6, Gentile provides for pointers including a location and a single location in at least in the first full paragraph in c. 7, where the pointers point to region elements in a raster format, which is well known to have a row-column location arrangement, since a bitmap contains at least location.

For claim 7, each region comprising a single texture is provided by Gentile in at least Fig. 2.

For claim 8, boundaries comprising a first texture is also provided Gentile in at least Fig. 2.

For claim 9, generating a bitmap is known as rasterization, and is provided by Gentile in at least the paragraph bridging cols. 2 and 3, and where conversion into a second texture is illustrated in at least Fig. 2.

For claim 10, finding a location in each region which is not the second texture for generating pointers is provided by Gentile in at least the in the first full paragraph in c. 7, and in Fig. 2, where pointers are provided for several textures.

For claim 11, a bitmap that has one bit per pixel is at least obviously, if not inherently, provided by the rasterization of Gentile in at least c. 2, lines 57-67, and pixels are provided as noted above for at least claims 1 and 2.

For claims 12 and 13, encoding the bitmap with run-length-encoding is provided by Gentile in at least c. 5, lines 20-23.

For claim 15, see the rejection of at least claim 1 above.

For claim 19, see the rejection of at least claim 11.

For claims 20 and 21, see the rejection of at least claims 12 and 13.

For claim 34, see the rejection of at least claim 1, and Figs. 1 and 10 of Gentile.

3.   Claims 3, 4, 14, 16-18, 22-27, and 31-33 are rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865, in view of Robinson, 4,855,934, as applied to claims 1, 2,

5-13, 15, 19-21, and 34 above, and further in view of Sakuragi et al., 5,382,100, or Baisuck et al., 5,440,720.

For claim 3, Gentile provides for textures in at least Fig. 2, and as noted in at least the in the first full paragraph in c. 7, but does not explicitly provide for assigning codes to these textures. However, this is conventional and well known, and is provided by Sakuragi et al. in at least c. 4, lines 8-18, and by Baisuck et al. in at least c. 3, line 45 - c. 4, line 45, where codes are provided by at least type, model identifier, and orientation. These conventional features can be used by Gentile, since he provides for textures in an imaging system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Sakuragi et al., since they provide for different sizes and patterns. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the features of Baisuck et al., since they provide for "tremendous compression" in the paragraph bridging col. 3 and 4.

For claim 4, pointers are provided by Baisuck et al. in at least c. 2, lines 44-57, and by Sakuragi et al. in at least c. 4, lines 8-18 as noted above for claim 3.

For claim 14, see at least the above rejections of at least claims 1, 3-5, and 8-9 above. Furthermore, at least two regions are illustrated by at least Gentile in at least Fig. 2.

For claim 16, see the rejection of at least claim 3 above. Sakuragi et al. provide for a palette by using a CGROM, and is also provided by Baisuck et al. as noted above for at least claim 3, as well as at least Figs. 2, 3, and 6(a), where a plurality of registers, e.g. the shape and group model registers, provide for palette associating textures and codes.

For claim 17, see the rejection of at least claims 3-5 above.

For claim 18, see the rejection of at least claims 4 and 6.

For claim 22, see the rejection of at least claim 1, and decompressing and filling is provided by Gentile in at least the last three full paragraphs in c. 6. The recitation "referencing" or equivalently references is not explicitly provided by Gentile, but is provided by at least Baisuck et al. in at least the first two full paragraphs in c. 4.

For claim 23, see the rejection of at least claim 11.

For claims 24 and 25, see the rejection of at least claims 12 and 13, and at least c. 6, lines 38-46.

For claim 26, converting the bitmap to multiple bits per pixel is suggested by Gentile in at least the last full paragraph in c. 6, since commands are used to specify color. This is also considered as admitted prior art by the Applicant on at least page 1, lines 10-15, where a black and white image (e.g. bitmap, which is already provided by Gentile), is subsequently colorized, thus providing for multiple bits per pixel.

For claim 27, referencing a pointer to determine a location is at least obviously, if not inherently, provided by Gentile, since he uses pointers to shapes and bit patterns in at least the in the first full paragraph in c. 7, where these bit patterns are defined by elements in a region in the raster, thus having a location. However, at least Baisuck et al. also provide for references or pointers in at least c. 2, lines 43-57, and in at least c. 4, lines 30-35, where a location are explicitly provided. Converting the regions pointed to by location to textures is provided by at least Gentile by the filling and coloring noted in the bottom full paragraph in at least c. 6, and by the shapes and bit patterns in at least the in the first full paragraph in c. 7.

For claim 31, see the rejection of at least claims 1 and 22. For overlaying the image on a background, see at least Fig. 2 of Gentile, and further note that this is also admitted prior art on page 1, lines 9-11 of the specification. Referencing the pointers is more explicitly provided by Baisuck et al. as noted above for at least claim 27.

For claim 32, see the rejection of at least claim 31. The illusion of motion is not explicitly provided by Gentile, but the repetition of referencing, filling, and overlaying is admitted prior art in the first full paragraph on page 1 of the specification, and is also conventional and well known, as evidenced by the conventional and well known video games also mentioned in the specification in the Background.

For claim 33, see the rejection of at least claims 1, 14, 22, and 31.

4.   Claim 28 is rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865, in view of Robinson, 4,855,934, Sakuragi et al., 5,382,100, or Baisuck et al., 5,440,720, as applied to claims 3, 4, 14, 16-18, 22-27, and 31-33 above, and further in view of Murata et al., 5,561,746.

For claim 28, Gentile at least obviously, if not inherently, provides for converting to color as a function of texture as indicated in at least Fig. 2 and in at least c. 5, lines 35-45. However, Murata et al. more explicitly provide for determining a function associated with texture(s) in at least col. 18, lines 35-43, and converting each pixel into a color(s) is provided in col. 18, lines 35-56. This feature of Murata et al. can be used by Gentile, since they at least suggest this as noted above. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Murata et al. for coloring as a function of texture, since they use video RAM storage and color codes, which provide for very fast processing.

5.   Claims 29 and 30 are rejected under 35 U.S.C. 103 as being unpatentable over Gentile, 5,539,865, in view of Robinson, 4,855,934, Sakuragi et al., 5,382,100, or Baisuck et al., 5,440,720, and Murata et al., 5,561,746, as applied to claim 28 above, and further in view of Foley et al. "Computer Graphics: Principles and Practice".

For claims 29 and 30, Murata at least obviously if not inherently provides for seed filling, since seed filling can mean starting the fill from a pixel within a boundary defined region - lines 8-10 on page 980 of Foley, where Murata provides for a boundary defined region as shown in Figs. 10 A- K and each polygon region of Murata is processed separately - col. 19, lines 54-57, col. 20, lines 5-12 and lines 58-68, with reference to Figs. 1B and 10I, 10J, and 10K, where it is seen that the filling is deterministic, where filling is commenced at the determined location defined by the functions and by scanning - col. 19, line 67 - col. 20, line 4. Since Murata does not explicitly provide for seed filling, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use one of the seed filling algorithms of Foley, since Foley provides for efficient region filling in the second paragraph under "The Basic Filling Algorithms" on page 980.

Response to Amendment

6.   Applicant's arguments filed January 16, 1998 have been fully considered but they are not persuasive.

The Applicant argues in the paragraph bridging pages 7-8 of the amendment, with respect to claims 1, 15, and 34, that Gentile et al. do not provide for a bitmap of boundaries and

pointers to textures, where each region is mapped by one pointer to one texture. The Examiner respectively disagrees, since Gentile suggests a bitmap in at least Fig. 2, and explicitly points to bit patterns with pointers in at least the first full paragraph in c. 7, as noted in the above rejection, as produced by rasterization, and a bitmap is also explicitly provided by Robinson as noted above.

The Applicant argues in the paragraph bridging pages 8-9 of the amendment, with respect to claims 22, 31, and 33, that Gentile does not provide for a bitmap of boundaries. The Examiner respectively disagrees - see the above paragraph.

The Applicant argues in the first full paragraph on page 9 of the amendment, with respect to claim 3, 4, 14, 16-18, 22-27, and 31-33, that Sakuragi et al. and Baisuck et al. do not provide for compressing an image into a bitmap of boundaries of regions and one or more pointers to textures, where each region is mapped by one pointer to one texture. The Examiner notes that these references are used for texture codes, so that they do not need to provide for a bitmap of boundaries and one pointer to one texture, since this is already provided by Gentile.

7.   Applicant's arguments with respect to claim 14 have been considered but are moot in view of the new grounds of rejection.

Final

8.   Applicant's amendment necessitated new grounds of rejection. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. in the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. in no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

Contact Information

9.   Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Timothy M. Johnson whose telephone number is (703) 306-3096.

Any inquiry of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone number is (703) 305-3900.

The Group Art Unit FAX number is (703) 308-5397.

Timothy M. Johnson
Patent Examiner
Art Unit 2723
February 21, 1998

JOSEPH MANCUSO
PRIMARY EXAMINER

****

IMPORTANT NOTICE

****

Effective November 16, 1997, the Examiner handling this application will be assigned to a new Art Unit as a result of the consolidation into Technology Center 2700. See the forth coming Official Gazette notice dated November 11, 1997. For any written or facsimile communication submitted ON OR AFTER November 16,1997, this Examiner, who was assigned to Work Group 2616, will be assigned to Art Unit 2723. Please include the new Art Unit in the caption or heading of any communication submitted after the November 16,1997 date. Your cooperation in this matter will assist in the timely processing of the submission and is appreciated by the Office.